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(54) FOLDER OF MOBILE TERMINAL

Abstract

Machine Translation | Human Translation

The present invention is to provide the folder of the mobile terminal in which the top cover and bellow cover of a folder are mutually interlocked with the hook method of contract, and in that way it can increase the manufacturing cost and productivity with shortening the assembling process, and it can reduce the space forming the connecting part and it improves the space conjugation rate and Holotrichia is possible through the various design, and the top cover taking shape the outer tube of a folder, the bellow cover, the circuit board which is built in inside covers and, and an interlocking is the fastening means both side cover interval it is formed between the top cover and bellow cover are included. It is faced with a plurality of hook portions protruded in the inner surface of the top cover and it is formed in the direction faced with the top cover of the bellow cover and the fastening means is comprised of a plurality of hook connecting parts, and the cap. The bellow cover is connected to be rotatable in the main body and is connected to the top cover. As to the circuit board which is built in inside covers and, LCD and receiver are adhered. As to a plurality of hook, the hook portion is hung. The cap is inserted into the hook connecting part in order to prevent that the hook portion is broken away from from the hook connecting part.

Machine Translation | Human Translation

PURPOSE: A folder of a mobile terminal is provided to form a hook unit on an upper cover, and to form a hook coupler on a lower cover, then to complete assembling by inserting the hook unit into the hook coupler, thereby reducing an assembling process and assembling time.

CONSTITUTION: A lower cover(4) is coupled with an upper cover(2) as rotating on a body. A circuit board(12) builds the covers(2,4) therein, attaches an auxiliary LCD(6) to a front surface as attaching an internal display window(18) to a back surface, and mounts a receiver(10) on one side thereof. The upper cover(2) is attached with an external display window(14) on a front surface in order to display a screen of the auxiliary LCD(6), and is attached with an auxiliary LCD pad(16) on a back surface. The lower cover(4) is attached with the internal display window(18) on the front surface in order to display a screen of a main LCD(8), and is attached with a main LCD pad(20), then forms a hinge coupler(22) rotatively connected to the body.

Representative Drawing(s)

Fig. 5

Descritption

Brief explanation of the drawing

2 Fig. 1 is a disassembled perspective view of the folder of the mobile terminal according to the prior art.

3 Fig. 2 is a front view of the assembled state of the folder of the mobile terminal according to the prior art.

4 Fig. 3 is a cross-sectional view of the level of II-II of Fig. 2.

5 Fig. 4 is an enlarged diagram of Fig. 3A the part.

6 Fig. 5 is a disassembled perspective view of the folder of the mobile terminal according to the present invention.

7 Fig. 6 is a front view of the assembled state of the folder of the mobile terminal according to the present invention.

8 Fig. 7 is a cross-sectional view of the level of III-III of Fig. 6.

9 Fig. 8 is an enlarged diagram of B part of Fig. 7.

10 <The description of reference numerals of the main elements in drawings>

11 2: top cover 4: bellow cover.

12 26: hook portion 28: hook connecting part.

13 30: cap 32: jamming protrusion.

14 34: jaw.

Details of the Invention

Purpose of the Invention

The Technical Field to which the Invention Belongs and the Prior Art in that Filed

15 The present invention relates to the folder type mobile terminal, particularly, to the folder of the mobile terminal making the coupling structure of a folder better and can shorten the assembling process and increase the space conjugation rate.

16 Generally, recently the folder type mobile terminal is therefore very much used with advantage of forming the display liquid crystal display on a folder and forming the liquid crystal display.

17 Particularly, recently, it is the trend with an increased use the folder type mobile terminal in which LCD is mounted on not only the inner side of a folder but also the outside surface of the dual LCD type is developed.

18 The circuit board is built in and the circuit board is comprised of the main body, and the folder circulatable, which is connected to the main body As to the main body, the menu button and dial button etc. are equipped in the front. As to the folder circulatable, which is connected to the main body and, the respective LCD is adhered to the inner side and outside surface.

19 Fig. 1 is a disassembled perspective view of the folder of the mobile terminal according to the prior art.
Fig. 2 is a front view of the folder of the mobile terminal of the prior art.

20 The folder of the prior art is comprised of the connected bellow cover (104), and the circuit board (112) to be rotatable in (non illustration) which is combined with the top cover (102) forming the outer tube of the terminal and is combined with the top cover (102). As to the circuit board (112), it is built in the top cover (102) and bellow cover (104) and the secondary LCD (106) is mounted on the front and the main LCD (108) is mounted on a backplane, and the receiver (110) etc. are mounted on one side.

21 In the outside surface of the top cover (102), the front window (116) is adhered and the secondary LCD pad (116) is adhered to the inner side. And in the outside surface of the bellow cover (104), the hinge joint (122) which is connected to one side while the rear window (118) is adhered and the main LCD pad (120) is adhered to the inner side to be rotatable in the main body is formed.

22 Here, the top cover (102) and bellow cover (104) are mutually interlocked with the screw (124).

23 Referring to
figs. 3 and
figs. 3 the combining structure of the bellow cover (104) and top cover (102) is illustrated in detail.

24 In four corner region of the top cover (102), the screw conclusion part (132) of the cylindrical type is formed so that the screw (124) be connected. The screw insertion part in which the screw (124) is inserted is formed in four corner region of the bellow cover (104).

25 And in the inner circumference of the screw conclusion part (132), the metal ring (138) of the cylindrical type in which the negative screw line is formed is molded so that the screw (124) be connected.

26 In the screw insertion part (134) of the bellow cover, the cap (130) covering the screw insertion part (134) after the screw (124) tightening in consideration of a design is inserted.

27 The assembly process of the bellow cover and top cover of prior art is illustrated in a next.

28 The metal ring (138) is inserted in the injection molding of the front cover (102) and the metal ring (138) is fixed to the screw conclusion part (132) of the front cover (102).

29 After arranging the circuit board (112) between the top cover (102) and bellow cover (104), the screw (124) is penetrated to the skew formed in the bellow cover (104) in the insertion part (134) and it screws in the metal ring (138) fixed to the top cover (102). The assembly is completed if the cap (130) is inserted in the screw insertion part (134) of the bellow cover (104).

30 But there is a problem that the space which the folder of the mobile terminal of the prior art as described above occupies

inside covers is enlarged because the screw conclusion part for the screw binding and screw insertion part is formed in the top cover and bellow cover and it lowers the space conjugation rate.

31 Moreover, there is a problem that the productivity is decreased since should screwing a screw in the assembly work after arranging the top cover and bellow cover with opposing while the assembling process becomes complicated and the assembly time increases. And the form of a cap cannot diversify a design due to especially, the screw binding because of being restricted to a circular.

32 Moreover, there is a problem that the operation process becomes complicated in the top cover for the screw binding since should working the metal ring with insert and the manufacturing cost increases. And the productivity is lowered.

Technical challenges of the Invention

33 The present invention is to provide the folder of the above-described mobile terminal which to solve problems with the conventional technology, is created, and as to the object of the present invention, the top cover and bellow cover of a folder are mutually interlocked with the hook method of contract, and in that way can increase the manufacturing cost and productivity with shortening the assembling process.

34 As to the other purpose, the top cover and bellow cover interval are connected by the hook method of contract. In that way it can reduce the space forming the hook connecting part and it improves the space conjugation rate and it provides the folder of the mobile terminal in which Holotrichia is possible through the various design.

35 As to the purpose of anothering, the cap inserted in the hook connecting part of the bellow cover and top cover provides the folder of the mobile terminal which can perform the impact which is generated when opening and closing and the buffering relieving a vibration of a folder with preventing to come off of the hook portion.

Structure & Operation of the Invention

36 The folder of the mobile terminal for realizing the above-described subject includes the top cover taking shape the outer tube of a folder, the bellow cover, the circuit board which is built in inside covers and, and an interlocking is the fastening means both side cover interval it is formed between the top cover and bellow cover. It is faced with a plurality of hook portions protruded in the inner surface of the top cover and it is formed in the direction faced with the top cover of the bellow cover and the fastening means is comprised of a plurality of hook connecting parts, and the cap. The bellow cover is connected to be rotatable in the main body and is connected to the top cover. As to the circuit board which is built in inside covers and, LCD and receiver are adhered. As to a plurality of hook, the hook portion is hung. The cap is inserted into the hook connecting part in order to prevent that the hook portion is broken away from from the hook connecting part.

37 If below, and the attached embodiment of the present invention are illustrated, it is the same as that of the next time.

38 Fig. 5 is a disassembled perspective view of the folder of the mobile terminal according to the present invention.
Fig. 6 is a front view of the assembled state of the folder of the mobile terminal according to the present invention.

39 The folder of the mobile terminal of the present invention is comprised of the top cover (2) taking shape the outer tube of a folder, the bellow cover (4), and the circuit board (12) etc. the receiver (10). The bellow cover (4) is connected to be rotatable in the main body (non illustration) and is connected to the top cover (2). The circuit board (12) etc. the receiver (10) the main LCD (8) is adhered to a backplane and it generates in one side to an acoustic while it is built in inside covers (2,4) and the secondary LCD (6) is adhered to the front side is mounted.

40 As to the top cover (2), the external display window (14) is adhered to the front side so that the screen of the supplemtary LCD (6) be indicated as an outside and the secondary LCD pad (16) is adhered to a backplane. And as to the bellow cover

(4), while the innner display window (18) is adhered to the front side so that the screen of the main LCD (8) be indicated and the main LCD pad (20) is adhered to a backplane, the main body (the non illustration) and the connected to be rotatable contraction part of hinge (22) are formed in one side.

41 Here, in the top cover (2) and bellow cover (4), an interlocking the fastening means is formed with the respective both side cover (2,4) interval as the.

42 As shown in
figs. 7 and
figs. 7 the fastening means is comprised of lots of the protruded hook portion (26), lots of the hook connecting part (28) which is formed in the edge of the bellow cover (4) and, and the cap (30) etc. which is inserted in the hook connecting part (28) and to weave the inner side direction by hands in the edge of the top cover (2). As to lots of the hook, the hook portion (26) is hung. As to the cap (30) etc. which is inserted in the hook, the hook portion (26) prevents a secession in the hook connecting part (28).

43 In the inner surface of the top cover (2), the hook portion (26) is formed to be protruded to the right angle direction as the regular length. It is the structure where the width becomes over the time narrow to the end part. It is abeam curve-cut and the jamming protrusion (32) hung in the catching part is formed in the end part.

44 Here, the hook portion (26) is desirable to be formed in four shops the corner part of the top cover (2) in order to increase the space conjugation rate. It is into one body shaped with the top cover. And an itself is desirable that an itself is formed in order to have the constant elastic force on an itself.

45 As to the hook connecting part (28), in order to have the constant space in which the hook portion (26) is inserted the inner side of the bellow cover (4) it is protruded. The jaw (34) in which the jamming protrusion (32) of the hook portion (26) is jammed is formed in the end part.

46 Here, the width (Q) of the part which is penetrated so that the hook portion (26) of the hook connecting part (28) be inserted is facilitated that the width (Q) of the part is formed in comparision with the width (R) of the jamming protrusion (32) of the hook portion (26) and the hook portion (26) is inserted into the hook connecting part (28).

47 Here, the insertion relief area (P) as much as the constant width is generated in the hook connecting part (28) if the jamming protrusion (32) of the hook portion (26) is inserted in the jaw (34) of the hook connecting part (28).

48 It has the concern in which the hook portion (26) is broken away from the hook connecting part (28) due to this insertion relief area (P). Above cap (30) is inserted in the insertion relief area (P) and the secession of the hook portion (26) is prevented.

49 Above cap (30) is formed with the rubber material having the constant elastic force. Because of being contracted in the range that the hook portion (26) is not broken away from even if it is to the utmost contracted, it can prevent the secession of the hook portion (26).

50 And as to above cap (30), in order to be inserted into the hook connecting part (28) it is formed with the same form as the inside of the hook connecting part (28). The surface is formed to be protruded in the surface of the bellow cover (4) as the constant width and it becomes the upper side of above cap (30) and main body in the switching action of a folder with inter contact and the upper side buffs the impact according to the switching action of a folder.

▸ Effects of the Invention

51 As described above, the folder of the mobile terminal which comprised works has the advantage that the hook portion is formed in the top cover and the hook connecting part is formed in the bellow cover. The assembling process can be simple and the assembly time can be shortened because the assembly is completed if the hook portion is inserted in the hook

connecting part. And the manufacturing cost according to that can be decreased.

52 Moreover, it has the advantage in which the hook portion and hook connecting part can increase the space conjugation rate relatively because the respective space occupied is small in the respective top cover and bellow cover.

53 Moreover, because of manufacturing the form of the cap inserted in the hook connecting part with the various form, a design can be diversified.

54 Moreover, it has the advantage in which the main body and cap are contacted in opening and shutting of a folder and the sieve which forms so that above cap be protruded in comparision with the surface of the bellow cover as the constant width and relieving an impact in opening and shutting of a folder.

Scope of Claims

Claim[1] :

55 The folder of the folder type mobile terminal including the top cover, the bellow cover, the circuit board which is built in inside covers and, and an interlocking is the fastening means both side cover interval it is formed between the top cover and bellow cover that takes shape the outer tube of a folder, wherein: the fastening means is faced with a plurality of hook portions protruded in the inner surface of the top cover and it is formed in the direction faced with the top cover of the bellow cover and the direction is comprised of a plurality of hook connecting parts in which the hook portion is hung; the bellow cover is connected to be rotatable in the main body and is connected to the top cover; and as to the circuit board which is built in inside covers and, LCD and receiver are adhered.

Claim[2] :

57 The folder of the mobile terminal which more includes the cap inserted into the hook connecting part in order to prevent a thing of claim 1, wherein in the folder of the mobile terminal, the hook portion is broken away from the hook connecting part

Claim[3] :

59 The folder of the mobile terminal of claim 1, wherein the hook portion is protruded to the right angle direction in the inner side of the top cover as the regular length; and the jamming protrusion which is curve-cut in the right angle direction is formed in the end part of the hook portion as the regular length in order to be jammed at the hook connecting part.

Claim[4] :

61 The folder of the mobile terminal of claim 3, wherein the hook portion is together shaped the top cover when molding.

Claim[5] :

63 The folder of the mobile terminal of claim 3, wherein the hook portion has the constant elastic force on an itself so that it be possible to be bent and an itself is formed in the inner side four corner region of the top cover.

Claim[6] :

65 The folder of the mobile terminal of claim 3, wherein the hook connecting part is protruded in order to have the constant space in which the hook portion is inserted in the inner side of the bellow cover; and the jaw hung in the jamming protrusion of the hook portion is formed in the end part of the hook connecting part.

Claim[7] :

67 The folder of the mobile terminal of claim 6, wherein the width of the penetrated part of the hook connecting part is formed in comparision with the width of the top part of the hook portion.

Claim[8] :

69 The folder of the mobile terminal which the hook connecting part is into one body shaped as to claim 6 with the bellow cover.

Claim[9] :

71 The folder of the mobile terminal of claim 2, wherein above cap is inserted in the insertion relief area generated in the hook connecting part when the hook portion being inserted and jammed at the hook connecting part and it prevents the secession of the hook portion.

Claim[10] :

73 The folder of the mobile terminal of claim 9, wherein above cap is formed with the rubber material which has the constant elastic force of the extent in which the hook portion is not broken away from the hook connecting part even if it is to the utmost contracted.

Claim[11] :

75 The folder of the mobile terminal of claim 10, wherein above cap is formed to be protruded in the surface of the bellow cover as the constant width in order to be contacted with the main body in the switching action of a folder and it relieves an impact.

Claim[12] :

77 The folder of the mobile terminal which is faced with lots of the hook portions protruded in the inner surface of the top cover and is formed in the direction faced with the top cover of the bellow cover and the fastening means is comprised as to the folder of the folder type mobile terminal including the top cover taking shape the outer tube of a folder, the bellow cover, the circuit board which is built in inside covers and, and an interlocking is the fastening means both side cover interval it is formed between the top cover and bellow cover of lots of the hook connecting part, and the cap, and as to lots of the hook, the hook portion is hung; and the cap is inserted in the hook connecting part and prevents the secession of the hook portion.

Claim[13] :

79 The folder type mobile terminal of the folder of the folder type mobile terminal including the top cover taking shape the outer tube of a folder, the bellow cover, and the circuit board, wherein: in the inner surface of the top cover, a plurality of hook connecting parts having the space of the specified form is formed; and a plurality of hook portions which is inserted in the hook connecting part and is hung in the direction faced with the top cover of the bellow cover is formed; the bellow cover is connected to be rotatable in the main body and is connected to the top cover; and the circuit board is built in inside covers.

Claim[14] :

81 The folder type mobile terminal of the folder of the folder type mobile terminal including the bellow cover taking shape the outer tube of a folder, the bellow cover, and the circuit board, wherein: in the inner surface of the top cover, a plurality of hook connecting parts having the space of the specified form is formed; a plurality of hook portions which is inserted in the catching part and is hung is formed in the direction faced with the top cover of the bellow cover; and the cap which prevents that the hook portion hung in the catching part is broken away from is inserted; the bellow cover is connected to be rotatable in the main body and is connected to the bellow cover; and the circuit board is built in inside covers.

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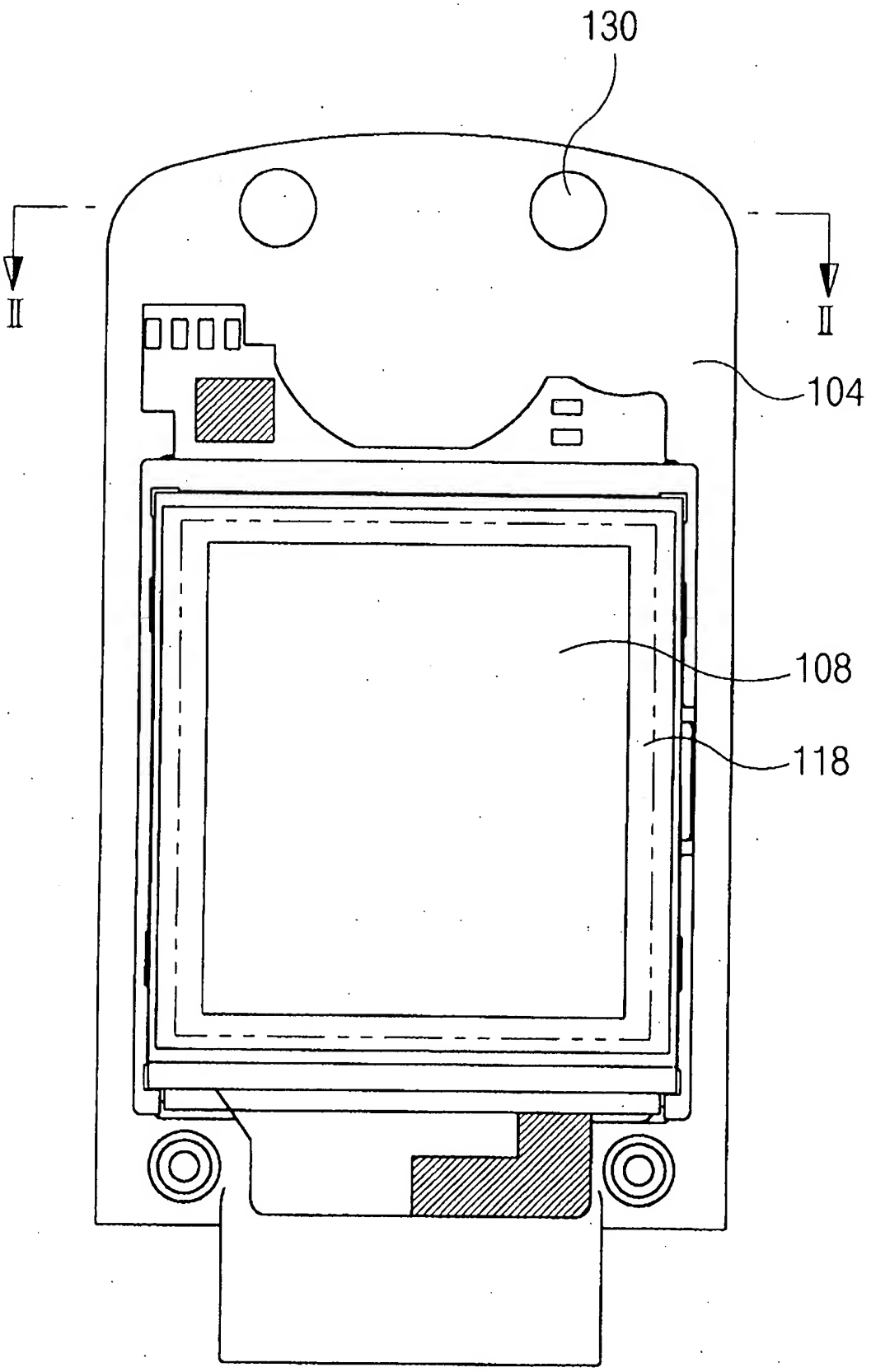
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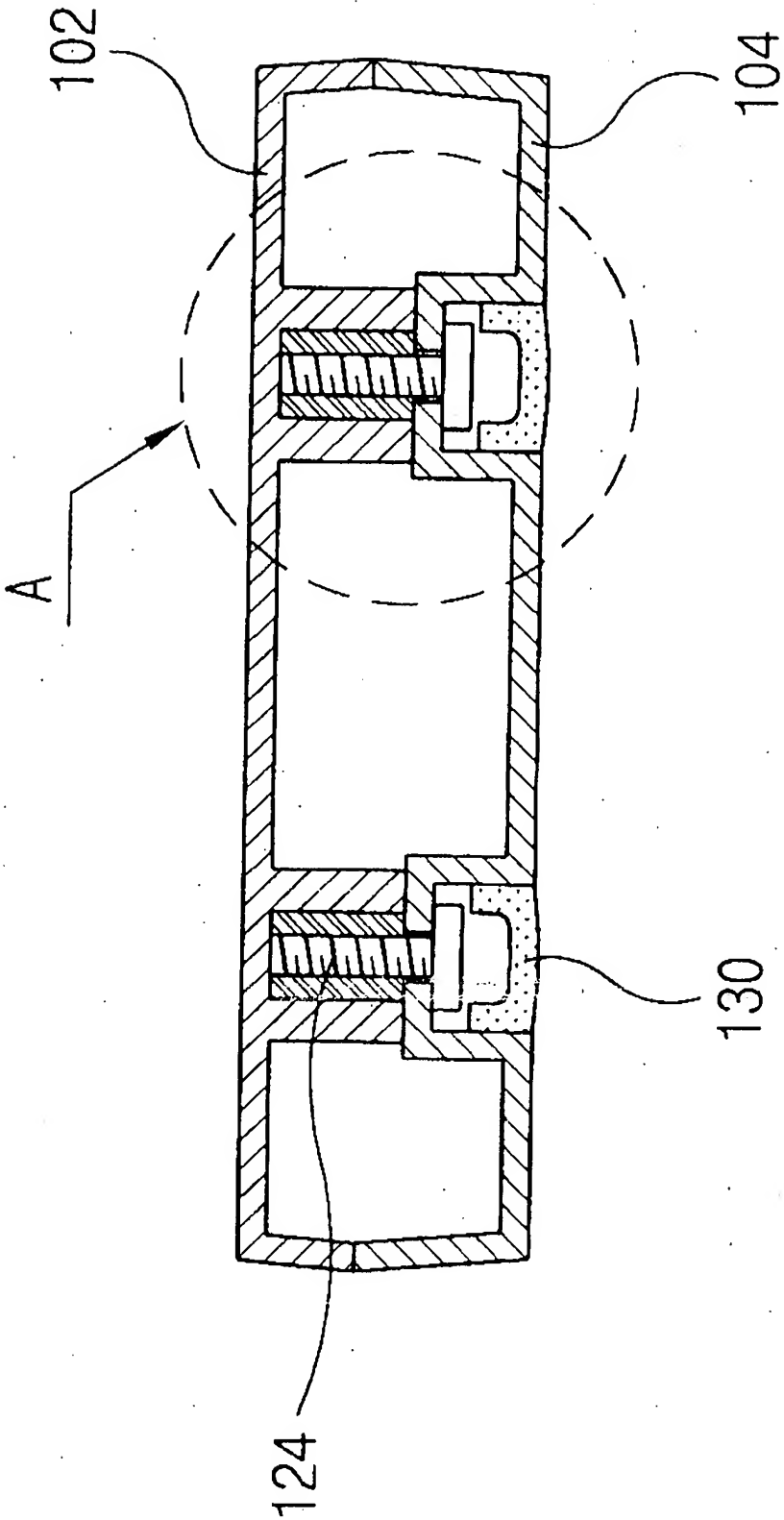
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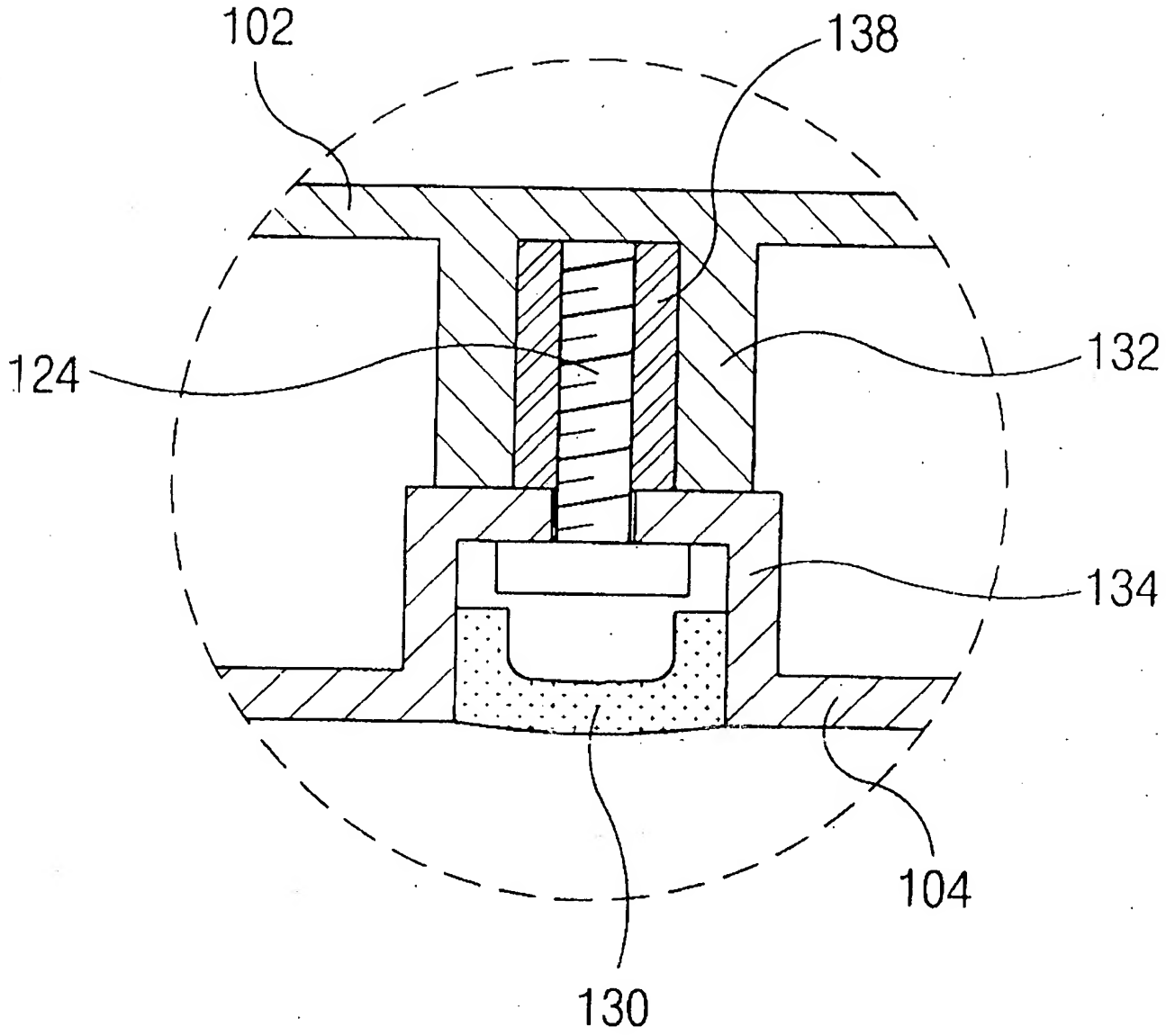
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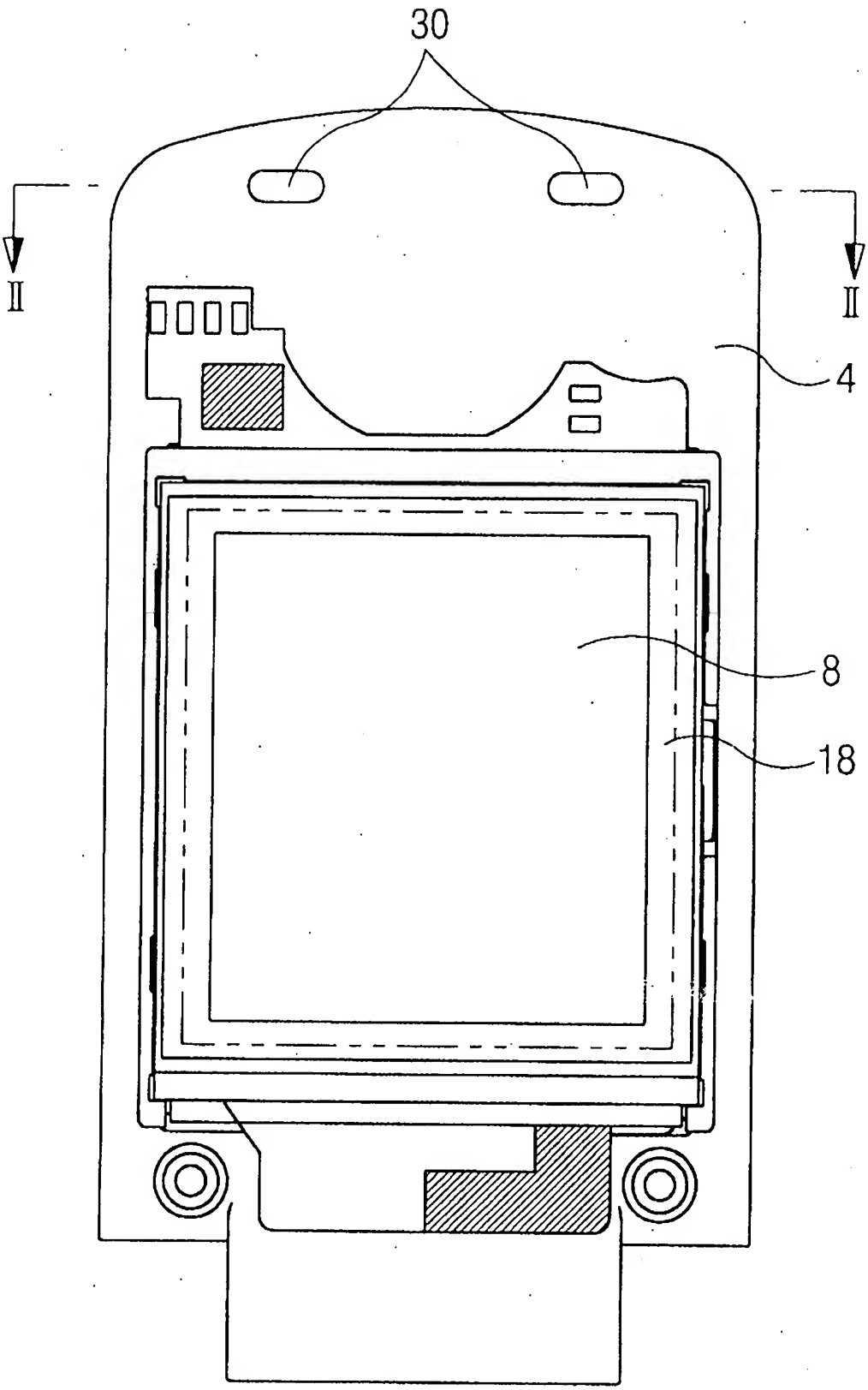
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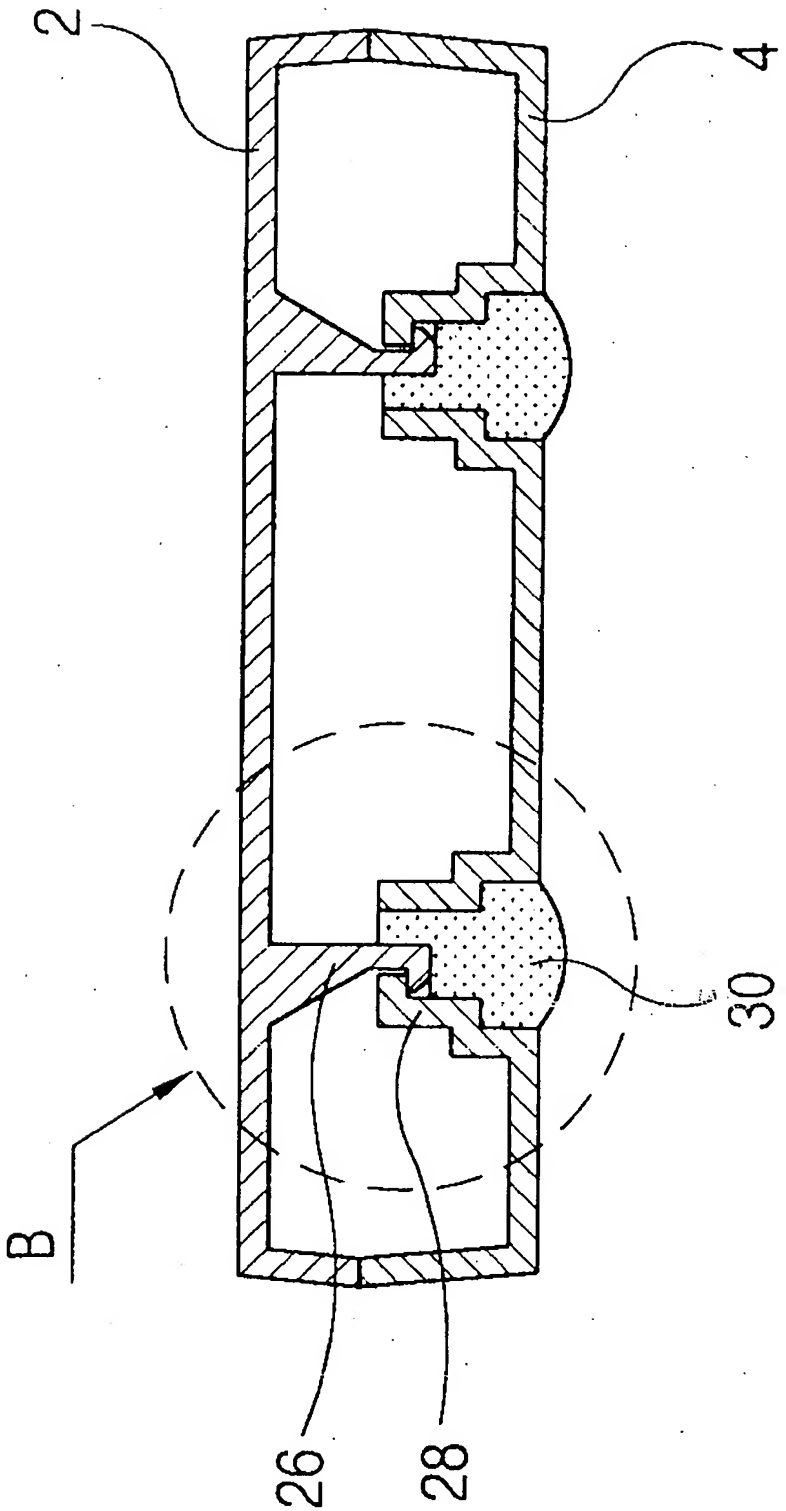
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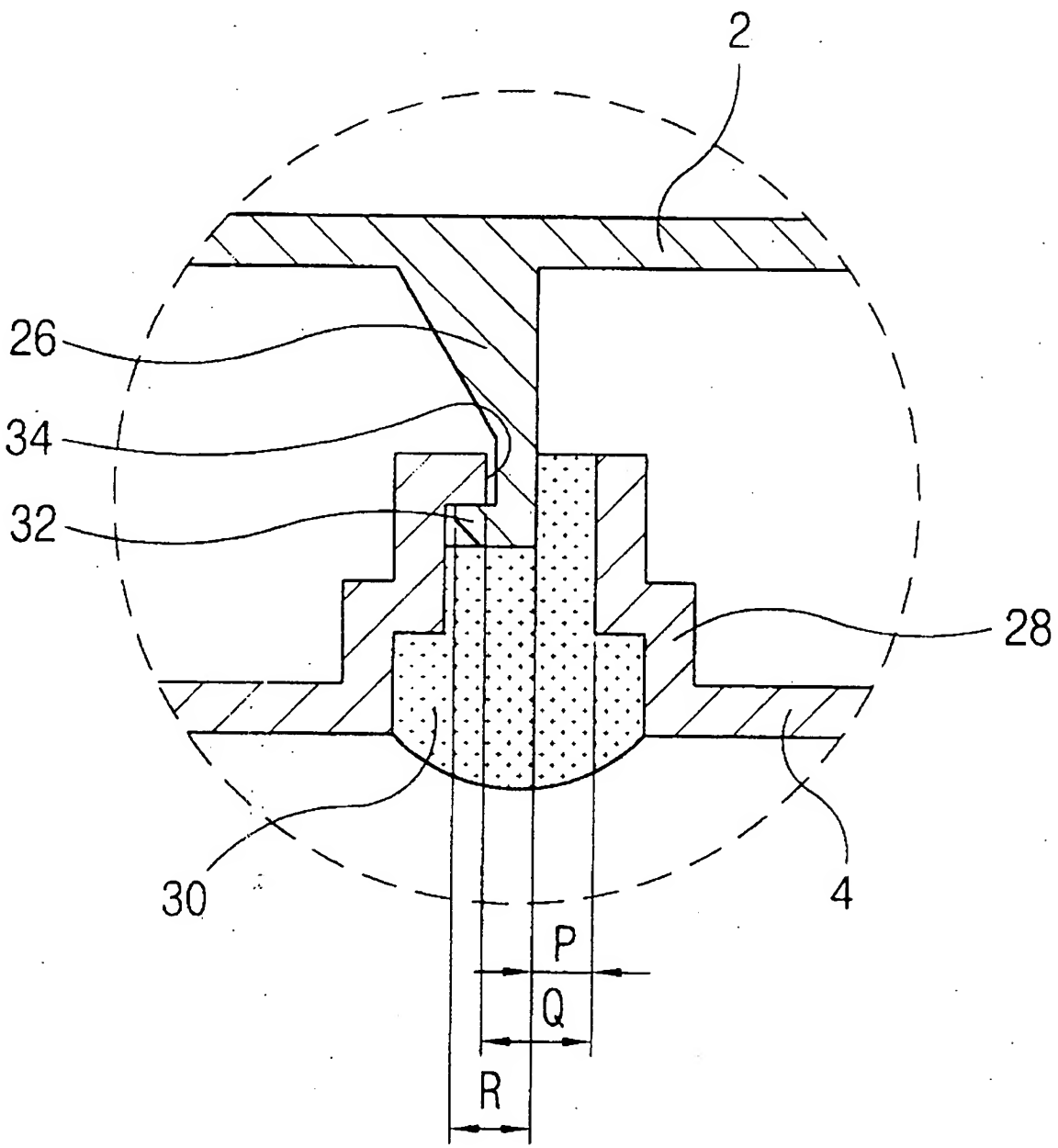
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